



Saskatchewan's synchrotron (inset) is an example of the investment now being aimed at Canada's scientific infrastructure.

# Drawing back the talent Canada

After postdoctoral stints at the University of Basel and the Massachusetts Institute of Technology, Michele Loewen was happy to come home to Canada last year. A full-time job in a government-funded lab, with access to a new national synchrotron was, she says, “an offer I couldn’t possibly say ‘no’ to”.

Loewen’s recruitment to Saskatoon’s Plant Biotechnology Institute illustrates the efforts of two institutions, the National Research Council (NRC), which runs the institute, and the Canada Foundation for Innovation (CFI), the government-created corporation that funds science-infrastructure improvements such as the University of Saskatchewan’s Canadian Light Source, a national synchrotron facility under construction in Saskatoon.

Although there is no central plan to reverse the brain drain — and no acknowledgment from Prime Minister Jean Chrétien that the problem exists (see *Nature* 401, 731–732; 1999) — those institutions are showing signs that it is possible to retain Canadians who were thinking about leaving and to win back native scientists who have sought work elsewhere.

One reason that scientists, especially young ones, leave in the first place is because the pay does not match up — especially against top university posts in the United States and industry jobs in the United States, Europe and Japan. One CFI programme, the New Opportunities Fund, is addressing that imbalance by supplementing the salaries and lab budgets of newly hired faculty at Canadian universities. In four years, the programme has helped to hire more than 1,000 scholars — many of whom would probably have left otherwise.

One of them is John Valliant, a medicinal inorganic

chemist who has done promising work on new compounds for medical imaging and on using inorganic elements to treat diseases such as rheumatoid arthritis. After a fellowship at Harvard, Valliant was offered jobs at a US university and in the US pharmaceutical industry that would have paid him at least 50% more than Canadian offers. But the CFI programme allowed him to accept a position at

## High-tech stakes

Tony Patterson, founding editor of *Silicon Valley North*, a newspaper for Canadian high-tech communities, estimates that there are a million Canadians working abroad in technology-related fields. He calls them the country’s greatest untapped human resource and says that they “comprise a network from which skilled candidates might be recruited for re-integration to Canadian careers”.

To help this come about, he plans a “high-

tech homecoming” this year that will bring these “stars of Canada’s expat community” together with their national counterparts. He has enlisted the leaders of the industry to establish a website to help to market opportunities in Canadian high-technology to expatriates. The high-tech homecoming, he says, will “help define the vision to lead Canada in an age of rampant technological opportunity”.

D.S.

www.hightechhomecoming.com

Back home: postdoc Michele Loewen returned to Canada after receiving an offer she couldn't refuse.



## Attracting foreign nationals

Both public and private efforts are bringing foreign scientists into Canada.

On the public side, the National Research Council (NRC) recently recruited David Austin, a Briton who had spent nine years in Japan with the telephone company NTT. The NRC position appealed to him because it offered a better chance of a long-term research career than he was likely to have had in Japan.

On the private side, infusions of cash are also drawing some talent. Perhaps the most notable is the Perimeter Institute for Theoretical Physics, which was

established with Can\$120 million by high-tech entrepreneur Mike Lazaridis and two colleagues (see *Nature* 414, 391; 2001).

The new centre has brought Canadian Raymond Laflamme, an expert in quantum information and quantum computing, back from Los Alamos National Laboratories in the United States.

And it also attracted Fotini Markopoulou from the Albert Einstein Institute in Germany and Lee Smolin from Imperial College London and Pennsylvania State University.

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McMaster University in Hamilton, Ontario, without any financial qualms.

The Canada Research Chairs programme is taking the same approach to recruitment and retention, but at a more senior level. The government programme will have funded 2,000 positions in Canadian institutions by 2005.

Like the CFI programme, Canada Research Chairs has succeeded in luring back scientists who have spent some time working in other countries. After the programme's inception, several Canadian universities approached Vincenzo De Luca, a specialist in plant and tree biology who left the University of Montreal to join Novartis (later Syngenta Biotechnology) in the United States.

He eventually decided on Brock University, a small establishment in St Catherine's, Ontario, on the Niagara peninsula. De Luca's motivation for returning to Canada was his realization that he was really more interested in doing basic research on transgenic crops than product development. And that would be difficult in industry.

"The kinds of things I'm interested in are oriented towards pathways, to metabolic engineering," he says. "The other really important thing for me was my interest in trying to do something that would be of use to my country."

The Brock opportunity offered the chance to help solve regional problems connected with the grape

industry, which in Niagara generates millions of dollars and is important to tourism. De Luca thinks his industrial experience could be of use there.

Another important factor in De Luca's decision is that the chairs' appointments last for seven years, and are renewable for another seven after that. "You can imagine the amount of freedom that's giving me," he says. "And I feel that I'm at the right stage of my career to exercise a certain amount of leadership that can help a lot of the younger faculty."

Canada's largest research agency, the NRC, cannot benefit directly from either the CFI programmes or the Canada Research Chairs, but it is a major employer of scientists and has success in recruiting scientists from abroad (see left). This is partly because of its active participation in international scientific programmes. Richard Normandin, director general of the NRC's Institute for Microstructural Sciences (IMS), says the NRC is a sponsor of the Canadian-European Research Initiative on Nanostructures (CERION), which includes 17 European universities. About 30 NRC scientists have adjunct appointments outside Canada.

The NRC also benefited from a boost of Can\$40 million (US\$25 million) a year in the recent federal budget and Can\$110 million over three years for high-tech ventures such as its new National Institute of Nanotechnology (see *Nature* 412, 846; 2001). "We're in expansion mode," says Peter Hackett, the NRC's vice-president of research. "Hiring new researchers is now our number-one corporate priority."

One new NRC researcher was happy with the timing of his offer. The NRC offered Robert Wolkow a position at its microstructural institute just as the climate at Bell Labs in Murray Hills, New Jersey, where he then worked, was turning sour (see *Nature* 412, 578-579; 2001). Clinching the deal, the new position provided Wolkow with the opportunity to do pure science, just as Bell was pushing him to do mundane applied work.

For Wolkow and others who had worked outside Canada, it may have been the government programmes that helped to lure them back — but other issues have kept them happy.

Michele Loewen found living in Saskatoon less expensive than in Boston. She can afford things as a Canadian researcher that she couldn't as a US postdoc, such as her own house located 10 minutes' walk from the university, and frequent trips to the local concert hall. And there are other benefits. "The Rocky Mountains are not far," she says. "And we have clean air!"

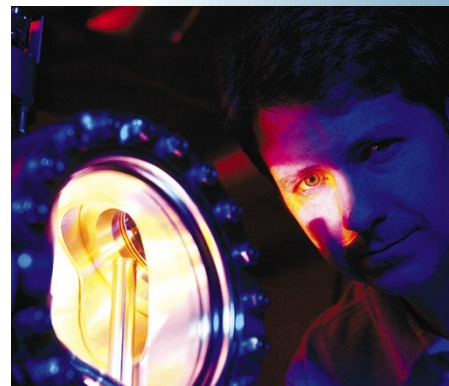
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Vincenzo De Luca came back to Canada under its Research Chairs programme.

Variety show: the chance to do more pure science convinced Robert Wolkow to return from the United States.



Recruiting: Richard Normandin.